
Probiotic Cell-Free Culture Supernatants From Kefir Grains and Inhibition of *Listeria monocytogenes*

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Resumo

Kefir is a sour fermented milk and contains a mixture of microorganisms, mainly lactic acid bacteria (LAB). LAB are able to produce a great variety of antimicrobial substances and may be a useful and effective strategy to prevent or reduce the incidence of pathogens, thus improving food safety and consumer health. With the objective of evaluating the antagonist effect on *L. monocytogenes*, LAB (n=12) cell-free supernatants (CFS) and cell-free neutralized supernatants (CFNS) were tested, using well diffusion and microtiter plates methods. LAB (genera *Lactococcus*, *Lactobacillus* and *Leuconostoc*) were isolated from milk and water kefir grains and identified by PCR. Four strains of *L. monocytogenes* were tested (serotypes 4a, 4b, 1/2a and one isolated from frankfurters). CFNS was obtained by adding NaOH solution (pH=6,2) and catalase. Both supernatants were filtered through 0.22µm pore membranes and stored under refrigeration. Nisin was used as control. CFS and CFNS tested by well diffusion method showed no inhibition against of four strains of *L. monocytogenes*. However, in the microtiter plate method, all strains were inhibited, until 30 hours of incubation. After this period, the inhibitory effect was no longer observed. This may be indicative of a bacteriostatic effect when compared to nisin. *Leuconostoc mesenteroides* 9U2 presented the best antagonistic effect in both supernatants. It can be concluded that strains of probiotic LAB isolated from kefir grains are potentially capable of producing substances

Referência:

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that show inhibitory ability against *L. monocytogenes* growth. These results are promising, since tested supernatants showed such capacity in their crude form. Future studies should investigate the possibility of obtaining concentrates of these substances with higher inhibitory effect and possible use in foods to ensure safety.

Palavras-Chave: Bacteriocins, Kefir, Lactic acid bacteria, *Listeria monocytogenes*, Probiotic

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